

SEQUENCE LISTING

<110> Virca, Duke
Bird, Timothy A.
Anderson, Dirk M.
Marken, John S.

<120> Human cDNAs Encoding Polypeptides Having Kinase Functions

<130> 2877-US

<160> 16

<170> PatentIn Ver. 2.0

<210> 1
<211> 181
<212> DNA
<213> Homo sapiens

<400> 1
gtacgccatg aagggtgtgc gcaaggcggc gctgggtgcag cgcccaaga cgcaagagca 60
cacgcgcacc gagcgctcg gtcggagact ggtgcgcag gcgccttcc tggtcacgct 120
gcactacgct ttccagacgg atgccaagct gcacccatc ctggactatg tgagcggcgg 180
g 181

<210> 2
<211> 221
<212> DNA
<213> Homo sapiens

<400> 2
cccgagaggt gccacatcag accgcctccg acttcgtgcg ggactcggcg gccagccacc 60
aggcggagcc cgaggcgta gaggcgccg tggcttcct gcttctgcaa ctctgcaacg 120
ggctggagca cctgaaggag cacggatca tccaccggga cctgtgcctg gagaacctgc 180
tgctggtgca ctgcaccctc caggccggcc ccggggcccg 221

<210> 3
<211> 1085
<212> DNA
<213> Homo sapiens

<400> 3
cgggcagggc tggagctggg ctgggatccc gagctcgca gcagcgcagc gggccggccc 60
acctgctggc gcccggagg ctctgagccc cggcggcgcc cggcccccacg cgaaacgacg 120
gggcgagatg cgagccaccc ctctggctgc tcctgcgggt tccctgtcca ggaagaagcg 180
gttggagttg gatgacaact tagataccga gcgtcccgatc cagaaacgag ctcgaagtgg 240
gccccagccc agactgcccc cctgcctgtt gcccctgagc ccacctactg ctccagatcg 300
tgcaactgct gtggccactg cctcccgatc tggccctat gtcctcctgg agcccggagga 360
gggcgggccc gcctaccagg ccctgcactg ccctacaggc actgagatata cctgcaaggt 420
gtaccccgatc caggaagccc tggccgtgt ggagccctac gcgcggctgc ccccgacaa 480
gcatgtggct cggcccaactg aggtcctggc tggtaaccag ctcctctacg ccttttcac 540
tcggacccat ggggacatgc acagcctgtt gcaagccgc caccgtatcc ctgagcctga 600
ggctgcccgtg ctctccgccc agatggccac cggccctggcg cactgtcacc agcacggct 660
ggtcctgcgt gatctcaagc tggtaaccat gtcctcctgg gaccgtgaga ggaagaagct 720
ggtgctggag aacctggagg actcctgcgt gctgactggg ccagatgatt ccctgtggga 780
caagcacgcg tgcccagcct acgtgggacc ttagataactc agtcacggg cctcataactc 840
ggcaaggca ggcgtatgtt ggagcctggg cgtggcgctc ttcaccatgc tggccggcca 900
ctaccccttc caggactcgg agcctgtct gctttcggc aagatccgcc gcggggccta 960
cgccctgcct gcaggcctct cggccctgc ccgtgtctg gttcgctgcc tccttcgtcg 1020
ggagccagct gaacggctca cagccacagg catcctcctg caccctggc tgcgacagga 1080

cccgaa

1085

<210> 4
<211> 388
<212> DNA
<213> Homo sapiens

<400> 4
cagcgagaag ccgacatgca tcgcctcttc aatcacccca acatcctcg cctcggtggct 60
tactgtctga gggAACGGGG tgctaagcat gaggcctggc tgctgctacc attcttcaag 120
agaggtacgc tgtggatga gatagaaagg ctgaaggaca aaggcaactt cctgaccgag 180
gatcaaatcc tttggctgct gctggggatc tgcagaggcc ttgaggccat tcatgccaag 240
ggttatgcct acagagactt gaagcccacc aatatattgc ttggagatga gggcagcca 300
gtttaatgg acttgggttc catgaatcaa gcatgcatcc atgtggaggg ctcccggccag 360
gctctgaccc tgcaggactg ggcagccc 388

<210> 5
<211> 1555
<212> DNA
<213> Homo sapiens

<400> 5
atgctaacta gtttaaacag atcttggAAC gagacgaccc gctgtggaaag agcgagcttt 60
ttggaactgt gcacgggaca gattggacgc acacccctcg ggaggcgcga aggcattggaa 120
aatttgaagc atattatcac ccttggccag gtcatccaca aacggtgtga agagatgaaa 180
tactgcaaga aacagtggcc ggcctgggc caccgcgtcc tcggcctgtat caagcccttg 240
gagatgctcc aggaccaagg aaagaggagc gtgcctctg agaagttaac cacagccatg 300
aaccgcttca aggctgccc ggaggaggct aatggggaga tagaaaagtt cagcaataga 360
tccaatatct gcaggtttct aacagcaagc caggacaaaa tactttcaa ggacgtgaac 420
aggaagctga gtgatgtctg gaaggagctc tcgctgttac ttcaagggttga gcaacgcgt 480
cctgtttcac ccataagcca aggagcgtcc tggcacagg aagatcagca ggatgcagac 540
gaagacaggc gagcttcca gatgctaaga agagataatg aaaaaataga agcttcactg 600
agacgattag aaatcaacat gaaagaaatc aaggaaactt tgaggcagta tttaccacca 660
aaatgcattgc aggagatccc gcaagagcaa atcaaggaga tcaagaagga gcagcttca 720
ggatccccgt ggattctgct aaggaaaat gaagtcaaga cactttataa aggagaatac 780
cacagagctc cagtgccat aaaagtattc aaaaaactcc aggctggcag cattgcaata 840
gtgaggcaga cttcaataa ggagatcaa accatgaaga aattcgaatc tcccaacatc 900
ctgcgtatat ttggatttg cattgatgaa acagtgactc cgcctcaatt ctccattgtc 960
atggagtact gtgaactcggt gaccctgagg gagctgttg atagggaaaa agacctcaca 1020
cttggcaagc gcatggtcct agtccctgggg gcagcccgag gcctataaccg gctacaccat 1080
tcagaagcac ctgaactcca cggaaaaatc agaagctcaa acttcctgtt aactcaaggc 1140
taccaagtga agcttgcagg atttgagttt agggaaaacac agacttccat gagtttggga 1200
actacgagag aaaagacaga cagagtcaaa tctacagcat atctctcacc tcaggaactg 1260
gaagatgtat tttatcaata tgatgtaaag tctgaaatat acagcttgg aatcgctc 1320
tggaaaatcg ccactggaga tatcccgtt caaggctgta attctgagaa gatccgcaag 1380
ctgggtggctg tgaagcggca gcaggagccaa ctgggtgaag actgccttc agagctgcgg 1440
gagatcattt atgagtgcgg ggcagcaggt cgtctcggtt caagatctgt agcggccgccc 1500
cggccgtcg acgtttaaac gcgtggccct cgagaggttt tccgatccgg tcgtat 1555

<210> 6
<211> 1498
<212> DNA
<213> Homo sapiens

<400> 6
cttcccgctg gacgtggagt acggaggccc agaccggagg tgcccgctc cgccctaccc 60
gaagcacctg ctgctgcgca gcaagtcgga gcagtgacgc ctggacagcc tgcgcagg 120
catggaggcag agcctccgtg cggccccaa cgagcccgag ggcggcgaca agagccgcaa 180
aagcgccaag gggacaaag gcggaaaagg taaaaagcag attcagaccc ctcccgttcc 240
cgtccgcaaa aacagcagag acgaagagaa gagagagtca cgcataaga gctactcgcc 300
atacgccttt aagttttca tggagcagca cgtggagaat gtcataaaaa cttaccagca 360

gaaggtaac cggaggctgc agctggagca agaaatggcc aaagctggac tctgtgaagc 420
tgagcaggag cagatgcgga agatcctcta ccagaaagag tctaattaca acaggttaaa 480
gagggccaag atggacaagt ctatgttgt caagatcaa accctggga tcggtgcctt 540
tggagaagtg tgccttgctt gtaagggtgga cactcacgcc ctgtacgcca tgaagaccct 600
aaggaaaaag gatgtcctga accggaatca ggtggccac gtcaaggccg agagggacat 660
cctggccgag gcagacaatg agtgggttgt caaactctac tactccttcc aagacaaaaga 720
cagcctgtac tttgtatgg actacatccc tggtgggac atgatgagcc tgctgatccg 780
gatggaggtc ttccctgagc acctggcccg gttctacatc gcagagctga ctttggccat 840
tgagagtgtc cacaagatgg gcttcatcca ccgagacatc aagcctgata acattttgat 900
agatctggat ggtcacatta aactcacaga tttcggcctc tgcaactgggt tcaggtggac 960
tcacaattcc aaatattacc agaaagggag ccatgtcaga caggacagca tggagcccg 1020
cgacctctgg gatgatgtgt ctaactgtcg gtgtgggac aggctgaaga ccctagagca 1080
gagggcgcgg aagcagcacc agaggtgcct ggcacattca ctggtggga ctccaaacta 1140
catcgcaccc gaggtgctcc tccgcaaagg gtacactcaa ctctgtgact ggtggagtgt 1200
tggagtgatt ctcttcgaga tgctgggtgg gcagccgccc ttttggcac ctactccac 1260
agaaacccag ctgaaggtga tcaactggga gaacacgctc cacattccag cccaggtgaa 1320
gctgagccct gaggccaggg acctcatcac caagctgtgc tgctccgcag accaccgcct 1380
ggggcggaat gggccgatg acctgaaggc ccaccccttc ttcagcgcca ttgacttctc 1440
cagtgacatc cggaagcatc cagcccccta cgttcccacc atcagccacc ccatggag 1498

<210> 7
<211> 60
<212> PRT
<213> Homo sapiens

<400> 7
Tyr Ala Met Lys Val Leu Arg Lys Ala Ala Leu Val Gln Arg Ala Lys
1 5 10 15
Thr Gln Glu His Thr Arg Thr Glu Arg Ser Val Leu Glu Leu Val Arg
20 25 30
Gln Ala Pro Phe Leu Val Thr Leu His Tyr Ala Phe Gln Thr Asp Ala
35 40 45
Lys Leu His Leu Ile Leu Asp Tyr Val Ser Gly Gly
50 55 60

<210> 8
<211> 73
<212> PRT
<213> Homo sapiens

<400> 8
Arg Glu Val Pro His Gln Thr Ala Ser Asp Phe Val Arg Asp Ser Ala
1 5 10 15
Ala Ser His Gln Ala Glu Pro Glu Ala Tyr Glu Arg Arg Val Cys Phe
20 25 30
Leu Leu Leu Gln Leu Cys Asn Gly Leu Glu His Leu Lys Glu His Gly
35 40 45
Ile Ile His Arg Asp Leu Cys Leu Glu Asn Leu Leu Val His Cys
50 55 60
Thr Leu Gln Ala Gly Pro Gly Pro Ala
65 70

<210> 9
<211> 360
<212> PRT
<213> Homo sapiens

<400> 9
Gly Gln Gly Trp Ser Trp Ala Gly Ile Pro Ser Ser Ala Ala Ala Gln
1 5 10 15
Arg Ala Gly Pro Pro Ala Gly Ala Leu Glu Ala Leu Ser Pro Gly Gly
20 25 30
Ala Arg Ala His Ala Glu Arg Arg Gly Glu Met Arg Ala Thr Pro Leu
35 40 45
Ala Ala Pro Ala Gly Ser Leu Ser Arg Lys Lys Arg Leu Glu Leu Asp
50 55 60
Asp Asn Leu Asp Thr Glu Arg Pro Val Gln Lys Arg Ala Arg Ser Gly
65 70 75 80
Pro Gln Pro Arg Leu Pro Pro Cys Leu Leu Pro Leu Ser Pro Pro Thr
85 90 95
Ala Pro Asp Arg Ala Thr Ala Val Ala Thr Ala Ser Arg Leu Gly Pro
100 105 110
Tyr Val Leu Leu Glu Pro Glu Glu Gly Gly Arg Ala Tyr Gln Ala Leu
115 120 125
His Cys Pro Thr Gly Thr Glu Tyr Thr Cys Lys Val Tyr Pro Val Gln
130 135 140
Glu Ala Leu Ala Val Leu Glu Pro Tyr Ala Arg Leu Pro Pro His Lys
145 150 155 160
His Val Ala Arg Pro Thr Glu Val Leu Ala Gly Thr Gln Leu Leu Tyr
165 170 175
Ala Phe Phe Thr Arg Thr His Gly Asp Met His Ser Leu Val Arg Ser
180 185 190
Arg His Arg Ile Pro Glu Pro Glu Ala Ala Val Leu Phe Arg Gln Met
195 200 205
Ala Thr Ala Leu Ala His Cys His Gln His Gly Leu Val Leu Arg Asp
210 215 220
Leu Lys Leu Cys Arg Phe Val Phe Ala Asp Arg Glu Arg Lys Lys Leu
225 230 235 240
Val Leu Glu Asn Leu Glu Asp Ser Cys Val Leu Thr Gly Pro Asp Asp
245 250 255
Ser Leu Trp Asp Lys His Ala Cys Pro Ala Tyr Val Gly Pro Glu Ile
260 265 270
Leu Ser Ser Arg Ala Ser Tyr Ser Gly Lys Ala Ala Asp Val Trp Ser
275 280 285
Leu Gly Val Ala Leu Phe Thr Met Leu Ala Gly His Tyr Pro Phe Gln

290

295

300

Asp Ser Glu Pro Val Leu Leu Phe Gly Lys Ile Arg Arg Gly Ala Tyr
305 310 315 320

Ala Leu Pro Ala Gly Leu Ser Ala Pro Ala Arg Cys Leu Val Arg Cys
325 330 335

Leu Leu Arg Arg Glu Pro Ala Glu Arg Leu Thr Ala Thr Gly Ile Leu
340 345 350

Leu His Pro Trp Leu Arg Gln Asp
355 360

<210> 10

<211> 146

<212> PRT

<213> Homo sapiens

<221> UNSURE

<222> (140)...(140)<223> UNSURE

<400> 10

Gln Arg Glu Ala Asp Met His Arg Leu Phe Asn His Pro Asn Ile Leu
1 5 10 15

Arg Leu Val Ala Tyr Cys Leu Arg Glu Arg Gly Ala Lys His Glu Ala
20 25 30

Trp Leu Leu Leu Pro Phe Phe Lys Arg Gly Thr Leu Trp Asn Glu Ile
35 40 45

Glu Arg Leu Lys Asp Lys Gly Asn Phe Leu Thr Glu Asp Gln Ile Leu
50 55 60

Trp Leu Leu Leu Gly Ile Cys Arg Gly Leu Glu Ala Ile His Ala Lys
65 70 75 80

Gly Tyr Ala Tyr Arg Asp Leu Lys Pro Thr Asn Ile Leu Leu Gly Asp
85 90 95

Glu Gly Gln Pro Val Leu Met Asp Leu Gly Ser Met Asn Gln Ala Cys
100 105 110

Ile His Val Glu Gly Ser Arg Gln Ala Leu Thr Leu Gln Asp Trp Ala
115 120 125

Ala Gln Arg Cys Thr Ile Ser Tyr Arg Ala Pro Xaa Leu Phe Ser Val
130 135 140

Gln Ser

145

<210> 11

<211> 505

<212> PRT

<213> Homo sapiens

<400> 11

Met Leu Thr Ser Leu Asn Arg Ser Trp Asn Glu Thr Thr Cys Cys Gly
1 5 10 15

Arg Ala Ser Phe Leu Glu Leu Cys Thr Gly Gln Ile Gly Arg Thr Pro
20 25 30

Leu Gly Arg Arg Glu Gly Met Glu Asn Leu Lys His Ile Ile Thr Leu
35 40 45

Gly Gln Val Ile His Lys Arg Cys Glu Glu Met Lys Tyr Cys Lys Lys
50 55 60

Gln Cys Arg Arg Leu Gly His Arg Val Leu Gly Leu Ile Lys Pro Leu
65 70 75 80

Glu Met Leu Gln Asp Gln Gly Lys Arg Ser Val Pro Ser Glu Lys Leu
85 90 95

Thr Thr Ala Met Asn Arg Phe Lys Ala Ala Leu Glu Glu Ala Asn Gly
100 105 110

Glu Ile Glu Lys Phe Ser Asn Arg Ser Asn Ile Cys Arg Phe Leu Thr
115 120 125

Ala Ser Gln Asp Lys Ile Leu Phe Lys Asp Val Asn Arg Lys Leu Ser
130 135 140

Asp Val Trp Lys Glu Leu Ser Leu Leu Leu Gln Val Glu Gln Arg Met
145 150 155 160

Pro Val Ser Pro Ile Ser Gln Gly Ala Ser Trp Ala Gln Glu Asp Gln
165 170 175

Gln Asp Ala Asp Glu Asp Arg Arg Ala Phe Gln Met Leu Arg Arg Asp
180 185 190

Asn Glu Lys Ile Glu Ala Ser Leu Arg Arg Leu Glu Ile Asn Met Lys
195 200 205

Glu Ile Lys Glu Thr Leu Arg Gln Tyr Leu Pro Pro Lys Cys Met Gln
210 215 220

Glu Ile Pro Gln Glu Gln Ile Lys Glu Ile Lys Lys Glu Gln Leu Ser
225 230 235 240

Gly Ser Pro Trp Ile Leu Leu Arg Glu Asn Glu Val Ser Thr Leu Tyr
245 250 255

Lys Gly Glu Tyr His Arg Ala Pro Val Ala Ile Lys Val Phe Lys Lys
260 265 270

Leu Gln Ala Gly Ser Ile Ala Ile Val Arg Gln Thr Phe Asn Lys Glu
275 280 285

Ile Lys Thr Met Lys Lys Phe Glu Ser Pro Asn Ile Leu Arg Ile Phe
290 295 300

Gly Ile Cys Ile Asp Glu Thr Val Thr Pro Pro Gln Phe Ser Ile Val
305 310 315 320

Met Glu Tyr Cys Glu Leu Gly Thr Leu Arg Glu Leu Leu Asp Arg Glu

325	330	335
Lys Asp Leu Thr Leu Gly Lys Arg Met Val Leu Val Leu Gly Ala Ala		
340	345	350
Arg Gly Leu Tyr Arg Leu His His Ser Glu Ala Pro Glu Leu His Gly		
355	360	365
Lys Ile Arg Ser Ser Asn Phe Leu Val Thr Gln Gly Tyr Gln Val Lys		
370	375	380
Leu Ala Gly Phe Glu Leu Arg Lys Thr Gln Thr Ser Met Ser Leu Gly		
385	390	395
Thr Thr Arg Glu Lys Thr Asp Arg Val Lys Ser Thr Ala Tyr Leu Ser		
405	410	415
Pro Gln Glu Leu Glu Asp Val Phe Tyr Gln Tyr Asp Val Lys Ser Glu		
420	425	430
Ile Tyr Ser Phe Gly Ile Val Leu Trp Glu Ile Ala Thr Gly Asp Ile		
435	440	445
Pro Phe Gln Gly Cys Asn Ser Glu Lys Ile Arg Lys Leu Val Ala Val		
450	455	460
Lys Arg Gln Gln Glu Pro Leu Gly Glu Asp Cys Pro Ser Glu Leu Arg		
465	470	475
Glu Ile Ile Asp Glu Cys Arg Ala Ala Gly Arg Leu Val Pro Arg Ser		
485	490	495
Val Ala Ala Ala Arg Ala Val Asp Val		
500	505	
<210> 12		
<211> 499		
<212> PRT		
<213> Homo sapiens		
<400> 12		
Phe Pro Leu Asp Val Glu Tyr Gly Gly Pro Asp Arg Arg Cys Pro Pro		
1	5	10
15		
Pro Pro Tyr Pro Lys His Leu Leu Leu Arg Ser Lys Ser Glu Gln Tyr		
20	25	30
Asp Leu Asp Ser Leu Cys Ala Gly Met Glu Gln Ser Leu Arg Ala Gly		
35	40	45
Pro Asn Glu Pro Glu Gly Gly Asp Lys Ser Arg Lys Ser Ala Lys Gly		
50	55	60
Asp Lys Gly Gly Lys Asp Lys Lys Gln Ile Gln Thr Ser Pro Val Pro		
65	70	75
80		
Val Arg Lys Asn Ser Arg Asp Glu Glu Lys Arg Glu Ser Arg Ile Lys		
85	90	95
Ser Tyr Ser Pro Tyr Ala Phe Lys Phe Phe Met Glu Gln His Val Glu		

100	105	110	
Asn Val Ile Lys Thr Tyr Gln Gln Lys Val Asn Arg Arg	Leu Gln Leu		
115	120	125	
Glu Gln Glu Met Ala Lys Ala Gly Leu Cys Glu Ala Glu Gln Glu Gln			
130	135	140	
Met Arg Lys Ile Leu Tyr Gln Lys Glu Ser Asn Tyr Asn Arg Leu Lys			
145	150	155	160
Arg Ala Lys Met Asp Lys Ser Met Phe Val Lys Ile Lys Thr Leu Gly			
165	170	175	
Ile Gly Ala Phe Gly Glu Val Cys Leu Ala Cys Lys Val Asp Thr His			
180	185	190	
Ala Leu Tyr Ala Met Lys Thr Leu Arg Lys Lys Asp Val Leu Asn Arg			
195	200	205	
Asn Gln Val Ala His Val Lys Ala Glu Arg Asp Ile Leu Ala Glu Ala			
210	215	220	
Asp Asn Glu Trp Val Val Lys Leu Tyr Tyr Ser Phe Gln Asp Lys Asp			
225	230	235	240
Ser Leu Tyr Phe Val Met Asp Tyr Ile Pro Gly Gly Asp Met Met Ser			
245	250	255	
Leu Leu Ile Arg Met Glu Val Phe Pro Glu His Leu Ala Arg Phe Tyr			
260	265	270	
Ile Ala Glu Leu Thr Leu Ala Ile Glu Ser Val His Lys Met Gly Phe			
275	280	285	
Ile His Arg Asp Ile Lys Pro Asp Asn Ile Leu Ile Asp Leu Asp Gly			
290	295	300	
His Ile Lys Leu Thr Asp Phe Gly Leu Cys Thr Gly Phe Arg Trp Thr			
305	310	315	320
His Asn Ser Lys Tyr Tyr Gln Lys Gly Ser His Val Arg Gln Asp Ser			
325	330	335	
Met Glu Pro Ser Asp Leu Trp Asp Asp Val Ser Asn Cys Arg Cys Gly			
340	345	350	
Asp Arg Leu Lys Thr Leu Glu Gln Arg Ala Arg Lys Gln His Gln Arg			
355	360	365	
Cys Leu Ala His Ser Leu Val Gly Thr Pro Asn Tyr Ile Ala Pro Glu			
370	375	380	
Val Leu Leu Arg Lys Gly Tyr Thr Gln Leu Cys Asp Trp Trp Ser Val			
385	390	395	400
Gly Val Ile Leu Phe Glu Met Leu Val Gly Gln Pro Pro Phe Leu Ala			
405	410	415	
Pro Thr Pro Thr Glu Thr Gln Leu Lys Val Ile Asn Trp Glu Asn Thr			
420	425	430	

Leu His Ile Pro Ala Gln Val Lys Leu Ser Pro Glu Ala Arg Asp Leu
435 440 445

Ile Thr Lys Leu Cys Cys Ser Ala Asp His Arg Leu Gly Arg Asn Gly
450 455 460

Ala Asp Asp Leu Lys Ala His Pro Phe Phe Ser Ala Ile Asp Phe Ser
465 470 475 480

Ser Asp Ile Arg Lys His Pro Ala Pro Tyr Val Pro Thr Ile Ser His
485 490 495

Pro Met Glu

<210> 13

<211> 375

<212> DNA

<213> Homo sapiens

<400> 13

cttgcaggat ttgagttgag gaaaacacag acttccatga gtttggaaac tacgagagaa 60
aagacagaca gagtcaaatc tacagcatat ctctcacctc aggaactgga agatgtattt 120
tatcaatatg atgtaaagtc tgaaatatac agctttggaa tcgtcctctg ggaaatcgcc 180
actggagata tcccgtttca aggctgtaat tctgagaaga tccgcaagct ggtggctgtg 240
aagcggcagc aggagccact gggtaagac tgcccttcag agctgcggga gatcattgtat 300
gagtgccggg cccatgatcc ctctgtgcgg ccctctgtgg atgaaatctt aaagaaactc 360
tccacccccc ctaag 375

<210> 14

<211> 125

<212> PRT

<213> Homo sapiens

<400> 14

Leu Ala Gly Phe Glu Leu Arg Lys Thr Gln Thr Ser Met Ser Leu Gly
1 5 10 15

Thr Thr Arg Glu Lys Thr Asp Arg Val Lys Ser Thr Ala Tyr Leu Ser
20 25 30

Pro Gln Glu Leu Glu Asp Val Phe Tyr Gln Tyr Asp Val Lys Ser Glu
35 40 45

Ile Tyr Ser Phe Gly Ile Val Leu Trp Glu Ile Ala Thr Gly Asp Ile
50 55 60

Pro Phe Gln Gly Cys Asn Ser Glu Lys Ile Arg Lys Leu Val Ala Val
65 70 75 80

Lys Arg Gln Gln Glu Pro Leu Gly Glu Asp Cys Pro Ser Glu Leu Arg
85 90 95

Glu Ile Ile Asp Glu Cys Arg Ala His Asp Pro Ser Val Arg Pro Ser
100 105 110

Val Asp Glu Ile Leu Lys Lys Leu Ser Thr Phe Ser Lys
115 120 125

<210> 15
<211> 1961
<212> DNA
<213> Homo sapiens

<400> 15
tcccgctgga cgtggagtac ggaggcccaag accggaggtg cccgcctccg ccctacccga 60
agcacctgct gctgcgcagc aagtccggagc agtacgacccct ggacagcctg tgcgcaggca 120
tggagcagag cctccgtgcg ggcccaacg agcccgaggg cggcgacaag agccgcaaaa 180
gcgcacaagggg ggacaaaggc ggaaaggata aaaaggcagat tcagacccct cccgttcccg 240
tccgcaaaaa cagcagagac gaagagaaga gagagtcacg catcaagagc tactcgccat 300
acgcctttaa gttttcatg gagcagcagc tggagaatgt catcaaaacc taccagcaga 360
aggttaaccg gaggctgcag ctggagcaag aaatggccaa agctggactc tgtgaagctg 420
agcaggagca gatgcggaaag atccttacc agaaagagtc taattacaac aggttaaaga 480
gggc当地 agataactt atgtttgtca agatcaaaac cctggggatc ggtgcctttg 540
gagaagtgtg ccttgcttgc aaggtggaca ctcacgcct gtacgccatg aagaccctaa 600
ggaaaaagga tgtcctgaac cggaaatcagg tggccacgt caaggccgag agggacatcc 660
tggccgaggc agacaatgag tgggtggtca aactctacta ctccttccaa gacaaagaca 720
gcctgtactt tgtatggac tacatccctg gtggggacat gatgagcctg ctgatccgga 780
tggaggtctt ccctgagcac ctggcccggt tctacatcgc agagctgact ttggccattt 840
agagtgtcca caagatgggc ttcatccacc gagacatcaa gcctgataac atttgatag 900
atctggatgg tcacattaaa ctcacagatt tcggcctctg cactgggttc aggtggactc 960
acaattccaa atattaccag aaaggagcc atgtcagaca ggacagcatg gagcccagcg 1020
acctctggga tggatgtct aactgtcggt gtggggacag gctgaagacc ctagagcaga 1080
ggcgccggaa gcagcaccag aggtgcctgg cacattcaact ggtggggact ccaaactaca 1140
tcgcacccga ggtgctcctc cgccaaagggt acactcaact ctgtgactgg tggagtgtt 1200
gagtgattct ttgcagatg ctgggtgggc agccgcctt tttggcacct actcccacag 1260
aaaccaggct gaaggtgatc aactgggaga acacgctcca cattccagcc caggtgaagc 1320
tgagccctga ggccagggac ctcacacca agtgcgttg ctccgcagac caccgcctgg 1380
ggcggaatgg ggccgatgac ctgaaggccc accccttctt cagccccatt gacttctcca 1440
gtgacatccg gaagcatcca gcccctacg ttcccaccat cagccacccc atggacaccc 1500
cgaatttcga ccccgtagat gaagaaagcc ttggAACGA tgccAGCGAA ggtAGCACCA 1560
aggcctggga cacactcacc tcgcccata acaagcatcc tgagcacgca ttttacgaat 1620
tcacccctcg aaggttctt gatgacaatg gctacccctt tcgatgccc aagccttcag 1680
gagcagaagc ttgcacaggct gagagctcag atttagaaag ctctgatctg gtggatcaga 1740
ctgaaggctg ccagcctgtg tacgtgtaga tggggccag gcaccccccac cactcgctgc 1800
ctcccaggc agggcccg agccgggtgcc ctcacaggcc aatagggaaag ccgaggcgtg 1860
ttttgtttta aattagtccg tcgattactt cacttggaaat tctgctttc accaagaaaa 1920
cccaaacagg acactttga aaacagcggt gccgcgaatt c 1961

<210> 16
<211> 588
<212> PRT
<213> Homo sapiens

<400> 16
Pro Leu Asp Val Glu Tyr Gly Gly Pro Asp Arg Arg Cys Pro Pro Pro
1 5 10 15
Pro Tyr Pro Lys His Leu Leu Leu Arg Ser Lys Ser Glu Gln Tyr Asp
20 25 30
Leu Asp Ser Leu Cys Ala Gly Met Glu Gln Ser Leu Arg Ala Gly Pro
35 40 45
Asn Glu Pro Glu Gly Gly Asp Lys Ser Arg Lys Ser Ala Lys Gly Asp
50 55 60
Lys Gly Gly Lys Asp Lys Lys Gln Ile Gln Thr Ser Pro Val Pro Val

65 70 75 80

Arg Lys Asn Ser Arg Asp Glu Glu Lys Arg Glu Ser Arg Ile Lys Ser
85 90 95

Tyr Ser Pro Tyr Ala Phe Lys Phe Phe Met Glu Gln His Val Glu Asn
100 105 110

Val Ile Lys Thr Tyr Gln Gln Lys Val Asn Arg Arg Leu Gln Leu Glu
115 120 125

Gln Glu Met Ala Lys Ala Gly Leu Cys Glu Ala Glu Gln Glu Gln Met
130 135 140

Arg Lys Ile Leu Tyr Gln Lys Glu Ser Asn Tyr Asn Arg Leu Lys Arg
145 150 155 160

Ala Lys Met Asp Lys Ser Met Phe Val Lys Ile Lys Thr Leu Gly Ile
165 170 175

Gly Ala Phe Gly Glu Val Cys Leu Ala Cys Lys Val Asp Thr His Ala
180 185 190

Leu Tyr Ala Met Lys Thr Leu Arg Lys Lys Asp Val Leu Asn Arg Asn
195 200 205

Gln Val Ala His Val Lys Ala Glu Arg Asp Ile Leu Ala Glu Ala Asp
210 215 220

Asn Glu Trp Val Val Lys Leu Tyr Tyr Ser Phe Gln Asp Lys Asp Ser
225 230 235 240

Leu Tyr Phe Val Met Asp Tyr Ile Pro Gly Gly Asp Met Met Ser Leu
245 250 255

Leu Ile Arg Met Glu Val Phe Pro Glu His Leu Ala Arg Phe Tyr Ile
260 265 270

Ala Glu Leu Thr Leu Ala Ile Glu Ser Val His Lys Met Gly Phe Ile
275 280 285

His Arg Asp Ile Lys Pro Asp Asn Ile Leu Ile Asp Leu Asp Gly His
290 295 300

Ile Lys Leu Thr Asp Phe Gly Leu Cys Thr Gly Phe Arg Trp Thr His
305 310 315 320

Asn Ser Lys Tyr Tyr Gln Lys Gly Ser His Val Arg Gln Asp Ser Met
325 330 335

Glu Pro Ser Asp Leu Trp Asp Asp Val Ser Asn Cys Arg Cys Gly Asp
340 345 350

Arg Leu Lys Thr Leu Glu Gln Arg Ala Arg Lys Gln His Gln Arg Cys
355 360 365

Leu Ala His Ser Leu Val Gly Thr Pro Asn Tyr Ile Ala Pro Glu Val
370 375 380

Leu Leu Arg Lys Gly Tyr Thr Gln Leu Cys Asp Trp Trp Ser Val Gly
385 390 395 400

Val Ile Leu Phe Glu Met Leu Val Gly Gln Pro Pro Phe Leu Ala Pro
405 410 415

Thr Pro Thr Glu Thr Gln Leu Lys Val Ile Asn Trp Glu Asn Thr Leu
420 425 430

His Ile Pro Ala Gln Val Lys Leu Ser Pro Glu Ala Arg Asp Leu Ile
435 440 445

Thr Lys Leu Cys Cys Ser Ala Asp His Arg Leu Gly Arg Asn Gly Ala
450 455 460

Asp Asp Leu Lys Ala His Pro Phe Phe Ser Ala Ile Asp Phe Ser Ser
465 470 475 480

Asp Ile Arg Lys His Pro Ala Pro Tyr Val Pro Thr Ile Ser His Pro
485 490 495

Met Asp Thr Ser Asn Phe Asp Pro Val Asp Glu Glu Ser Pro Trp Asn
500 505 510

Asp Ala Ser Glu Gly Ser Thr Lys Ala Trp Asp Thr Leu Thr Ser Pro
515 520 525

Asn Asn Lys His Pro Glu His Ala Phe Tyr Glu Phe Thr Phe Arg Arg
530 535 540

Phe Phe Asp Asp Asn Gly Tyr Pro Phe Arg Cys Pro Lys Pro Ser Gly
545 550 555 560

Ala Glu Ala Ser Gln Ala Glu Ser Ser Asp Leu Glu Ser Ser Asp Leu
565 570 575

Val Asp Gln Thr Glu Gly Cys Gln Pro Val Tyr Val
580 585